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| 09/982,236 | 10/19/2001 | Eric Gaussier | A0A25-US-NP | 7611 |
| 61962 7590 04/24/2009 FAY SHARPE / XEROX - PARC 1228 EUCLID AVENUE, 5TH FLOOR THE HALL BUILDING CLEVELAND, OH 44115 | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

09/982,236

Applicant(s)

GAUSSIER ET AL.

Examiner

CAM-LINH NGUYEN

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date: _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 03/09/2009 has been entered.
2. Applicant's amendments to claims 1 – 26 are acknowledged. Consequently, claims 1 – 26 are currently pending for further processing.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 10 – 12, 15 – 19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 10, 12, 15, directed to a method for clustering data in a database comprising plurality of steps. However, the claim lack of a physical hardware to carry out the invention.

Based on the Office's guidance to Examiners is that a § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is

ted, for example, by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example, by identifying the material that is being changed to a different state.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 9, 20 - 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckerman et al (U.S. 6,742,003 B2) in view of Fohn et al (U.S. 6,460,025 B1) [both previously provided].

◆ As per claim 1, 8, 20 – 23,

Heckerman et al (U.S. 6,742,003 B2) discloses a method for clustering a plurality of documents (See the title of Heckerman) comprised of a plurality of clusters (see Fig. 3A - 3K), wherein each document includes a plurality of words (attributes) (col. 27, lines 67), the method comprising:

- “Accessing the document collection” corresponds to the collection storage component 801 (See Fig. 8, col. 19, lines 27 – 30 of Heckerman).
- “Performing a clustering process that creates a hierarchy of clusters that reflects a segregation of the documents in the collection based on the words included in the documents” corresponds to the clustering process that form the hierarchical tree (See Fig.

11, 15, col. 20, lines 29 – 49, col. 24, lines 65 – col. 25 lines 35, col. 28, line 1 of Heckerman). The segment of the document (see the abstract, col. 21, lines 61 – 64, col. 25, lines 36 – 47 of Heckerman)

- “Wherein the first and second clusters are associated with different paths of the hierarchy” See Fig. 7 of Heckerman where there is multiple paths in the hierarchy.
- “Storing a representation of the hierarchy of clusters in a memory” See Fig. 8, element 803, Fig. 15, col. 25, lines 15 – 17 of Heckerman.
- “Making the representation available to an entity in response to a request associated with the document collection” See Fig. 15, col. 26, lines 43 – 47 of Heckerman.

Heckerman does not clearly disclose “Wherein a document in the collection is assigned to a first cluster in the hierarchy based on a first segment of the respective document, and the respective document is assigned to a second cluster in the hierarchy based on a second segment of the respective document”. Heckerman mentions that the document has n attributes (col. 27, line 67), and based on the matches or those attribute settings, a document can belong to multiple clusters in the hierarchical tree and therefore, forming a multi level hierarchical organizations (col. 5, lines 21 – 28 of Heckerman).

However, on the other hand, Fohn discloses a method for improving use browsing through hierarchies of information (see the abstract of Fohn). Fohn teaches that “entity relevance is calculated for the entities in the hierarchies, and this information is used to guide the user in his exploration (see the abstract of Fohn). Especially, Fohn teaches that “the entities e_5 and e_6 (elements 445 and 450 of Fig. 4) are common to the hierarchies of both these root nodes, and traversing from root node n_1 to root node n_4 would therefore not yield an empty solution state”

(col. 14, lines 52 – 56 of Fohn). Clearly Fohn teaches that an entity can be placed in two different categories (or cluster or nodes). Fig. 4, Fohn discloses that entity e4 (445) can belong to node n1 and n4. Fig. 6A, Fohn also discloses another example of entity 613, which can belong to “group Portrait” and “Birthday” nodes depending on different perspective on the camera product set (col. 20, lines 51 – 60 of Fohn).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to apply the teaching of Fohn into the invention of Heckerman because the combination would “provide a powerful flexible technique for locating entities in a large information space using hierarchical navigation and browsing of these one or more hierarchies”. (Col. 24, lines 14 – 17 of Fohn). The combination system would enable a user to search for a solution meeting his selected constraints from a multi-perspective viewpoint, guiding him through ascent and descent in a hierarchy as well as lateral exploration and movement to other hierarchies (col. 24, lines 19 – 23 of Fohn).

- ◆ As per claims 2, 9, the combination of Heckerman and Fohn discloses:
 - “Assigning the document collection to a first class ... setting a probability parameter to an initial value ... determining ... first class” See Fig. 11, Fig. 15 and corresponding texts of Heckerman.
- ◆ As per claims 3, the combination of Heckerman and Fohn discloses:
 - “Determining whether the first class has split into two child classes” See Fig. 11 where there are two categories in a set.
- ◆ As per claim 4, the combination of Heckerman and Fohn discloses:

- “Repeating the step of determining for each document in the collection” See Fig. 11 of Heckerman.
- ◆ As per claims 5 – 7, the combination of Heckerman and Fohn disclose:
 - “Performing the clustering process” See Fig. 15 and corresponding texts.
- ◆ As per claims 24 - 25, the combination of Heckerman and Fohn disclose:
 - “Wherein the representation defines the probability of a document as the product of the probability of the (document, word) pairs it contains” (See Fig. 16 - 18 and associated texts of Heckerman).

7. Claims 10 – 19, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckerman et al (U.S. 6,742,003 B2) in view of Fohn et al (U.S. 6,460,025 B1) as applied to claims 1 – 9, 20 - 26 above, and further in view of D. Maxwell Chickering (U.S. 6,556,958 B1).

- ◆ As per claim 10, 12 – 16, 26,

With all limitations in claim 1, further claims 10, 12 – 16 include an EM process or a modified EM process.

Heckerman teaches a clustering process using EM algorithm (col. 25, lines 9 – 10, Heckerman), to calculate the distance between the records in two categories using attribute-value (col. 15, lines 16 – 20, col. 18, lines 35 - 40). The EM process in Heckerman is modified (col.8, lines 11 - 18), and several different equations can be used to calculate the similarity (col. 15, lines 21 - col. 19, lines 23). Clearly, Heckerman implicitly teaches about the modified EM process in the invention.

Further, Chickering also discloses a method for fast clustering with sparse data (see abstract of Chickering). Chickering teaches that the EM is used in soft clustering process (col. 7, lines 4 – 6), and a modified EM algorithm is disclosed (col. 8, lines 7 – col. 13, lines 55, Chickering). It would have been obvious to one with ordinary skill in the art at the time the invention was made to apply the teaching of Chickering into the invention of Heckerman since both inventions were available and the combination would allow the user with more flexible ways in clustering the data in the database.

♦ As per claims 11, 17 - 18,

- “Assigning the document collection to a first class ... setting a probability parameter to an initial value ...determining ... first class” See Fig. 11, Fig. 15 and corresponding texts of Heckerman.

♦ As per claim 19,

- “Determining whether the first class has split into two child classes” See Fig. 11 of Heckerman where there are two categories in a set.

Response to Arguments

8. Applicant's arguments with respect to claims 1 - 26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Zhang et al (U.S. 2003/0018637A1) discloses a distributed clustering method and system.
- Scott Woodrooffe Cunningham (U.S. 2002/0129038 A1) discloses a Gaussian mixture models in a data mining system.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAM-LINH NGUYEN whose telephone number is (571)272-4024. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on (571) 272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571 – 273 – 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/CamLinh Nguyen/
Primary Examiner, Art Unit 2161